AGCATCCCAGCATGGAGGCAGCCCTGACCGGGCCCAACGCCTCCTCGCACTTCTGGGCCAACTACACTTTCTCTGAC $\verb|CTACTCATTCACCATCGTCTTCTCGCTCTTCGGTAATGTCCTGGTCTGTCATGTCATCTTCAAGAACCAGCGCATGC| \\$ ACTCGGCCACCAGCCTCTTCATTGTCAACCTGGCAGTGGCGGACATCATGATCACATTGCTCAACACGCCCTTCACT $\tt TTGGTCCGCTTTGTGAACAGCACATGGGTGTTTGGGAAGGGCATGTGTCATGTCAGTCGCTTTGCTCAGTACTGTTC$ $\tt GGATCTCCATCACCAAGGGTGTCATATATATTGCTGTCATCTGGGTCATGGCTACCTTCTTCTCTCTGCCACATGCC$ TGGCCTATGCTCGTGTGGCCAAGAAGCTGTGGCTCTGTAACACCATTGGCGACGTGACCACAGAGCAGTACCTCGCC $\verb|CTGCGACGCAAGAAGAAGACCACCGTGAAGATGCTGGTGCTTGTGGTAGTCCTCTTTGCCCTCTGCTGGTTCCCTCT|\\$ $\tt CCATGAGCAGTACTTGTTATAACCCCTTCATCTACTGCTGGCTCAATGAGAACTTTAGGGTTGAGCTTAAGGCATTG$ $\tt CTCACAATTGACCAGACACTAACAGAGTTGGAAAGTAACACAGAAGCAGTGAGATGCTTGGGTTCCTAGGAACCTGT$ AAACCACCTCAGCTTCAACAGAGGCTGGTCCAGTCAACCACCTCCAATTGTGTAGCATCTGCCACCTTGCCCTTCCT AAAGGCTTTCTGAAGTCATTGGAACAGGAATAATCACACAGCTTCAGTGACCTTGGCTCTATCCATGACCAGACAGG ACCCATTTTGGCTTCTTAAAAACAAAGAGAAATTAGTATTGCCACTTTGAAAAGTTCAGAAAAGTAAAGAAATGAGT AATTTATCTGTAGCTTTTGCCTTCTGTGTGTGTACATTTGTACTTTTAAAATCCTGAACTACACGTGTCCATGTAGAT TGTAATAATTAGCAAGAAACTGGAATATATCAGAGTATTATTGAATTC (SEQ ID NO:1)

MKVPPVLLLFLLSSVRATEQPQVVTEHPSMEAALTGPNASSHFWANYTFSDWQNFVGRRRYGAESQNPTVKALLIVA YSFTIVFSLFGNVLVCHVIFKNQRMHSATSLFIVNLAVADIMITLLNTPFTLVRFVNSTWVFGKGMCHVSRFAQYCS LHVSALTLTAIAVDRHQVIMHPLKPRISITKGVIYIAVIWVMATFFSLPHAICQKLFTFKYSEDIVRSLCLPDFPEP ADLFWKYLDLATFILLYLLPLFIISVAYARVAKKLWLCNTIGDVTTEQYLALRRKKKTTVKMLVLVVVLFALCWFPL NCYVLLLSSKAIHTNNALYFAFHWFAMSSTCYNPFIYCWLNENFRVELKALLSMCQRPPKPQEDRLPSPVPSFRVAW TEKSHGRRAPLPNHHLPSSOIOSGKTDLSSVEPVVAMS (SEQ ID NO:2)

FIGURE 1



Underlined = deleted in targeting construct

Bold = sequence flanking Neo insert in targeting construct

GGGGTGGCAGTCGGCACCATCAGGCTCCCTTGGCGTTTCGGAGTTTTCTCTGTGGTCCCG ACTCTCCGGAGGATCTCGGTTGTCTCCCAAGTCGGAACCTGGCACGGTCCAGGTTCACTC GGAGGTCCGGGCTTCCTCTGTGCCCCGTGCCCCTCGCTCCCAGGCTCCCTCTGTGGTGTG GACTCCTCTAGCCCGGTGCGCTCAGCCCCTCGCACCCAGCCTCCAGGCACAGAGCCCGGC ${\tt AGGGAGCTCAGCCCTTGTGCCTAGAGCTGCAGTGGCTGGACATGAAGGTTCCTCCTGT} \\ \underline{CC}$ TGCTTCTCTTTCTGTCCTCAGTGCGAGCTACTGAGCAACCGCAGGTCGTCACTGAGC ATCCCAGCATGGAGGCAGCCCTGACCGGGCCCAACGCCTCCTCGCACTTCTGGGCCAACT <u>ACACTTTCTCTGACTGGCAGAACTTCGTGGGCAGGAGACGTTATGGGGCCGAGTCCCAGA</u> ACCCCACGGTGAAAGCACTGCTCATCGTGGCCTACTCATTCACCATCGTCTTCTCGCTCT TCGGTAATGTCCTGGTCTGTCATGTCATCTTCAAGAACCAGCGCATGCACTCGGCCACCA GCCTCTTCATTGTCAACCTGGCAGTGGCGGACATCATGATCACATTGCTCAACACGCCCT GTCGCTTTGCTCAGTACTGTTCTCTACATGTCTCAGCACTGACTCTGACAGCTATCGCAG TGGACCGCCACCAGGTCATCATGCATCCACTGAAGCCTCGGATCTCCATCACCAAGGGTG TCATATATATTGCTGTCATCTGGGTCATGGCTACCTTCTTCTCTCTGCCACATGCCATCT ACTTCCCGGAGCCAGCTGACCTCTTCTGGAAGTATCTGGACCTGGCCACCTTCATCCTGC TCTACCTACTTCCACTCTTCATTATCTCAGTGGCCTATGCTCGTGTGGCCAAGAAGCTGT GGCTCTGTAACACCATTGGCGACGTGACCACAGAGCAGTACCTCGCCCTGCGACGCAAGA AGAAGACCACCGTGAAGATGCTGGTGCTTGTGGTAGTCCTCTTTGCCCTCTGCTGGTTCC CTCTCAACTGCTATGTCCTCTTTGTCCAGCAAGGCCATCCACACCAACAATGCCCTCT ACTTTGCCTTCCACTGGTTTGCCATGAGCAGTACTTGTTATAACCCCTTCATCTACTGCT GGCTCAATGAGAACTTTAGGGTTGAGCTTAAGGCATTGCTGAGCATGTGCCAAAGGCCAC AGAAGAGCCATGGTCGGAGGGCTCCACTACCTAATCACCACTTGCCCTCTTCCCAGATCC AGTCTGGGAAGACAGATCTGTCATCTGTGGAACCCGTTGTGGCCATGAGTTAGGGAAAGC TGGAAGTTGGTGGGGGAGGGTTCTTTCCTCTCACAATTGACCAGACACTAACAGAGTTGG AAAGTAACACAGAAGCAGTGAGATGCTTGGGTTCCTAGGAACCTGTCCAGCCCCATCTGA TGGAAACCACCTCAGCTTCAACAGAGGCTGGTCCAGTCAACCACCTCCAATTGTGTAGCA TCTGCCACCTTGCCCTTCCTACTGCTGAGCAACCACAGGGGGACTTGAGCCATACTATTG GTGGGCCTGCCCCACATGCTCAGAAAAGAACAGGCACAAAAGGCTTTCTGAAGTCATTGGA ACAGGAATAATCACACAGCTTCAGTGACCTTGGCTCTATCCATGACCAGACAGGACCCAT TTTGGCTTCTTAAAAACAAAGAGAAATTAGTATTGCCACTTTGAAAAGTTCAGAAAAGTA ACATTTGTACTTTTAAAATCCTGAACTACACGTGTCCATGTAGATTGTAATAATTAGCAA GAAACTGGAATATATCAGAGTATTATTGAATTC

FIGURE 2A



Gene Sequence Structure *

299 bp

Sequence Deleted

753 bp

Size of partial cDNA: 2253 bp



Targeting Vector* (genomic sequence)

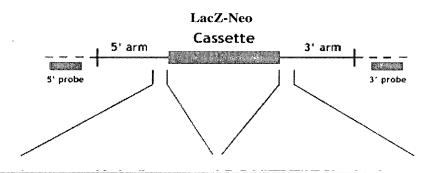
Construct Number: 463

Arm Length:

5': 2.5 kb **3**': 0.6 kb

Targeting VectorTargeting VectorEndogenous Locus

* Not drawn to scale



5'>CTGGCACGGTCCAGGTTCACT CGGAGGCCCGGGCTTCCTCTGTGC CCCGTGCCCCTCGCTCCCTGGCTC CCTCTGTGGTGTGGACTCCTCTAG CCCGGTGCGCTCAGCCCCTCGCAC CCAGCCTCCAGGCACAGAGCCCGG CAGGGAGCTCAGCCCTTGTGCCTA GAGCTGCAGTGGCTGGACATGAAG GTTTCTCCTGT<3' (SEQ ID NO:3)

TCGCAGTGGACCGCCACCAGGTGA GAGCACCTGTCCCCAGCAGCATGC TCCCATCTCCGTCTATGCCTGGCT GGCTGGTGGGAATACTGCCACCAC GGTCTGTAGGGAATACTCTCAGGA CAGTGACTCATTCAGTCCCGCTGA CAGCGTGTGTGCTTGCCTCCTTGT TGATCAATTTG<3' (SEQ ID NO:4)

5'>CAGCACTGACTCTGACAGCTA

FIGURE 2B

